HONDA WATER PUMP

WB20X·WB30X

Click here to save this manual to your computer.

OWNER'S MANUAL

© HONDA MOTOR CO., LTD. 1983

Thank you for purchasing a Honda water pump.

This manual covers the operation and maintenance of WB20X and WB30X water pumps. All information in this publication is based on the latest product information available at the time of approval for printing.
Honda Motor Co., Ltd. reserves the right to make changes at any time without notice and without incurring any obligation.
The illustrations in this book are based on the WB20X unless otherwise noted.

No part of this publication may be reproduced without written permission.

This manual should be considered a permanent part of the pump and should remain with the pump if it is resold.

Pay special attention to statements preceded by the following words:

- For safety, never pump flammable or corrosive liquids such as gasoline or acid. Also, to avoid pump corrosion, never pump sea water, muddy water, chemical solutions, or caustic liquids such as used oil, wine, or milk.

WARNING **Indicates a strong possibility of severe personal injury or death if instructions are not followed.**

CAUTION: Indicates a possibility of personal injury or equipment damage if instructions are not followed.

NOTE: Gives helpful information.

If a problem should arise, or if you have any questions about the pump, consult an authorized Honda dealer.

WARNING **Honda water pumps are designed to give safe and dependable service if operated according to instructions. Read and understand the Owner's Manual before operating the pump. Failure to do so could result in personal injury or equipment damage.**

It is illegal in some areas to operate an engine without a U.S.D.A. qualified spark arrester; check local laws and regulations. An optional spark arrester for this pump is available from your authorized Honda pump dealer.

CONTENTS

1. SAFETY INSTRUCTIONS 1
2. COMPONENT IDENTIFICATION 3
3. PREPARATION 5
4. STARTING THE ENGINE 10
5. OPERATION 12
6. STOPPING THE ENGINE 13
 - High altitude operation 14
7. MAINTENANCE 15
8. TRANSPORTING/STORAGE 20
9. TROUBLESHOOTING 22
10. SPECIFICATIONS 24
11. WARRANTY SERVICE 25

WARNING

To ensure safe operation—

- For safety, never pump flammable or corrosive liquids such as gasoline or acid. Also, to avoid pump corrosion, never pump sea water, muddy water, chemical solutions, or caustic liquids such as used oil, wine, or milk.
- Place the pump on a firm, level surface. If the pump is tilted or overturned, fuel spillage may result.
- To prevent fire hazards and to provide adequate ventilation, keep the pump at least 1 meter (3 feet) away from buildings and other equipment during operation. Do not place flammable objects close to the pump.
- Children and pets must be kept away from the area of operation due to a possibility of burns from hot engine components.
- Know how to stop the pump quickly, and understand the operation of all controls. Never permit anyone to operate the pump without proper instructions.
- Gasoline is extremely flammable and is explosive under certain conditions.
- Refuel in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the refueling area or where gasoline is stored.
- Do not overfill the fuel tank. After refueling, make sure the tank cap is closed properly and securely.
- Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.
- Never run the engine in an enclosed or confined area. Exhaust contains poisonous carbon monoxide gas; exposure can cause loss of consciousness and may lead to death.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. Let the engine cool before storing the pump indoors.

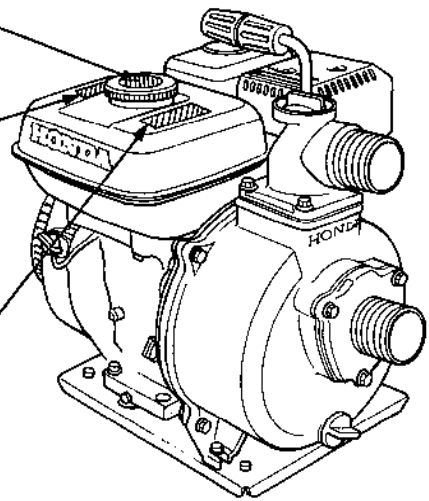
< CAUTION LABEL LOCATION >

GASOLINE CAUTION LABEL



WARNING

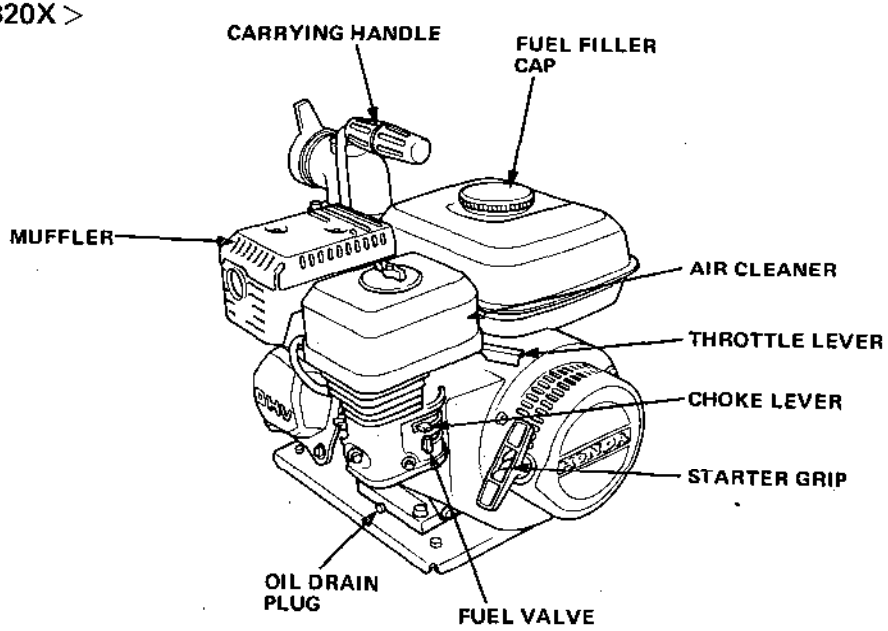
DO NOT PUMP FLAMMABLE OR CORROSIVE MATERIALS. AN EXPLOSION OR FIRE COULD RESULT, CAUSING SEVERE PERSONAL INJURY.

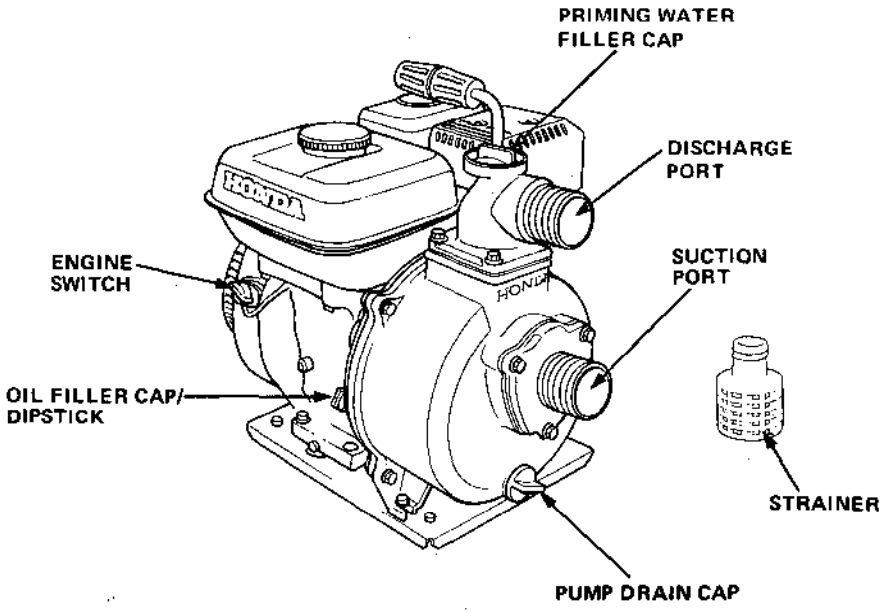


PUMP CAUTION LABEL

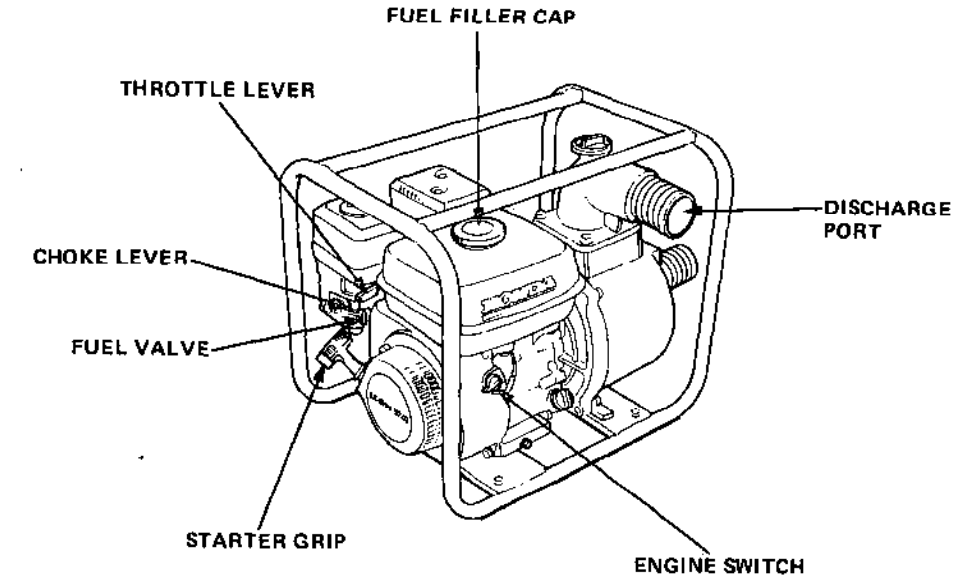
CAUTION! DO NOT RUN WITHOUT PRIMING WATER. DRY OPERATION WILL BURN THE SEAL.	PRECAUCION! NO HAGA FUNCIONAR SIN CEBADO FUNCIONAMIENTO SECO QUEMA EL SELLO.
VORSICHT! VOR DEM ANLAUFEN BEI TESTUND LEERLAUF GEHÄUSE MIT WASSER BEFÜLLEN. TROCKEN-AUF ZERSTÖRT DIE DICHTUNGEN.	PRÉCAUTION! NE FAITE PAS FONCTIONNER SANS AMORSAGE. FONCTIONNEMENT AU SEC BRULE LE JOINT D'ETANCHEITE.

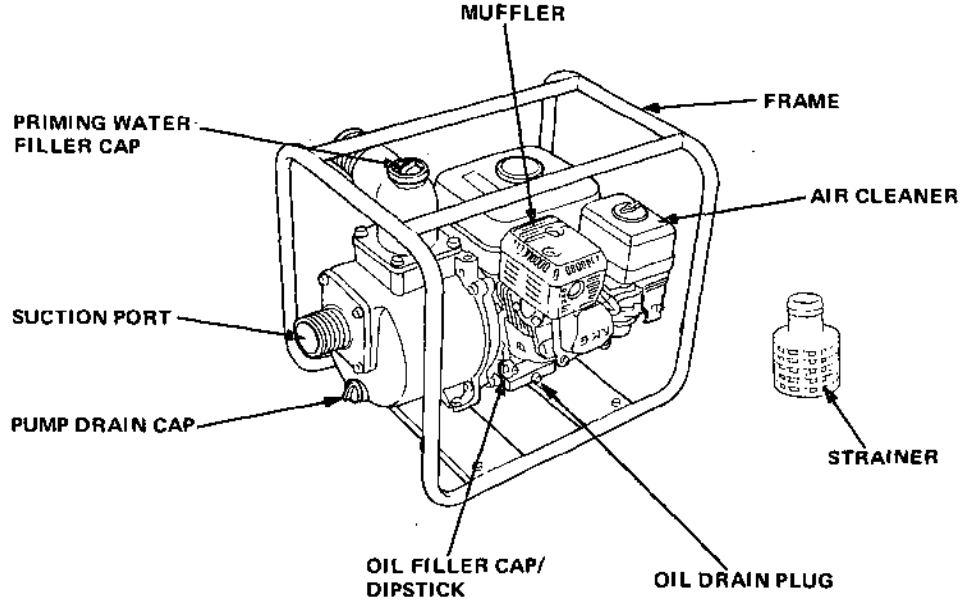
< WB20X >


CARRYING HANDLE
FUEL FILLER CAP
MUFFLER
AIR CLEANER
THROTTLE LEVER
CHOKE LEVER
STARTER GRIP
OIL DRAIN PLUG
FUEL VALVE


PRIMING WATER FILLER CAP
DISCHARGE PORT
ENGINE SWITCH
SUCTION PORT
OIL FILLER CAP/ DIPSTICK
STRAINER
PUMP DRAIN CAP

< WB30X >


FUEL FILLER CAP
THROTTLE LEVER
DISCHARGE PORT
CHOKE LEVER
FUEL VALVE
STARTER GRIP
ENGINE SWITCH


MUFFLER
FRAME
PRIMING WATER FILLER CAP
AIR CLEANER
SUCTION PORT
PUMP DRAIN CAP
STRAINER
OIL FILLER CAP/ DIPSTICK
OIL DRAIN PLUG

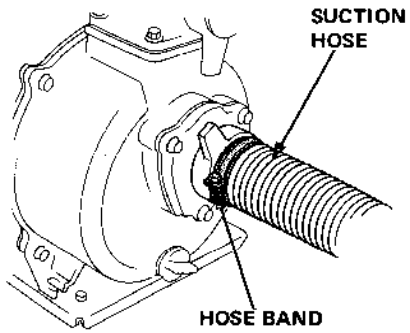
1. Connect the suction hose.

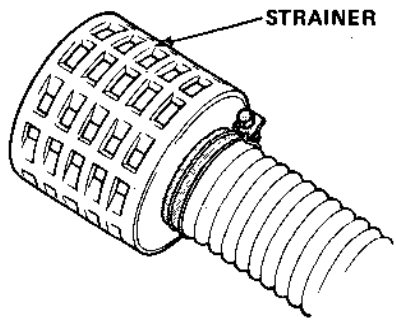
Use commercially available hose, hose connector, and hose bands. The suction hose must be of reinforced, noncollapsible construction. Suction hose length should not be longer than necessary, as pump performance is best when the pump is not far above the water level. Self-priming time is also proportional to hose length.

The strainer that is provided with the pump should be attached to the end of the suction hose with a band, as shown.

CAUTION: Always install the strainer on the end of the suction hose before pumping. The strainer will exclude debris that can cause clogging or impeller damage.

NOTE: Tighten the hose connector and bands to prevent air leakage and loss of suction. A loosely connected suction hose will reduce pump performance and self-priming ability.

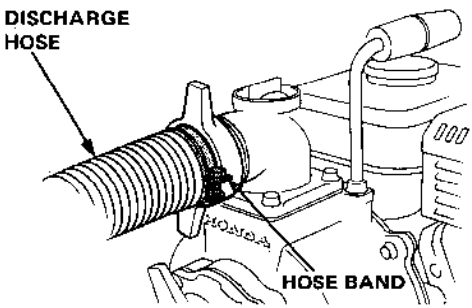




2. Connect the discharge hose.

Use a commercially available hose, hose connector, and hose band. A short, large-diameter hose is most efficient. Long or small-diameter hose increases fluid friction and reduces pump output.

NOTE: Tighten the hose band securely to prevent the hose from disconnecting under high pressure.

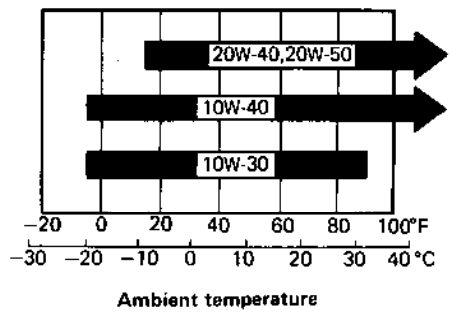


3. Check the engine oil level.

CAUTION:

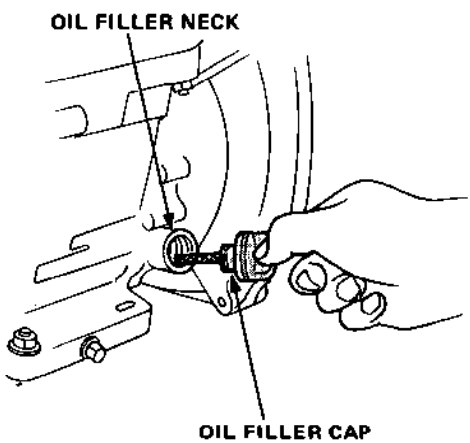
- **Engine oil is a major factor affecting engine performance and service life. Nondetergent oils and 2-stroke oils are not recommended because they have inadequate lubricating characteristics.**
- **Be sure to check the engine on a level surface with the engine stopped.**

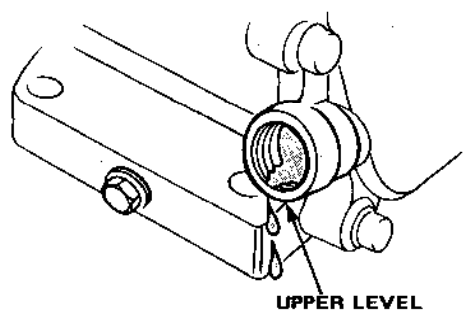
Use Honda 4-stroke oil, or an equivalent high detergent, premium quality motor oil certified to meet or exceed U.S. automobile manufacturer's requirements for Service Classification SE or SF, (Motor oils classified SE or SF will show this designation on the container.)
SAE 10W-40 is recommended for general, all-temperature use.



1. Remove the oil filler cap/dipstick and wipe it clean.
2. Insert the filler cap/dipstick into the oil filler neck, but do not screw it in.
3. If the level is low, fill to the top of the oil filler neck with recommended oil.

CAUTION: Running the engine with insufficient oil can cause serious engine damage.





4. Check the fuel level.

Your engine is designed to use any gasoline that has a pump octane number $\left(\frac{R + M}{2}\right)$ of 86 or higher, or that has a research octane number of 91 or higher. Gasoline pumps at service station normally display the pump octane number.
We recommend that you use unleaded fuel because it produces fewer engine and spark plug deposits and extends the life of exhaust system components.

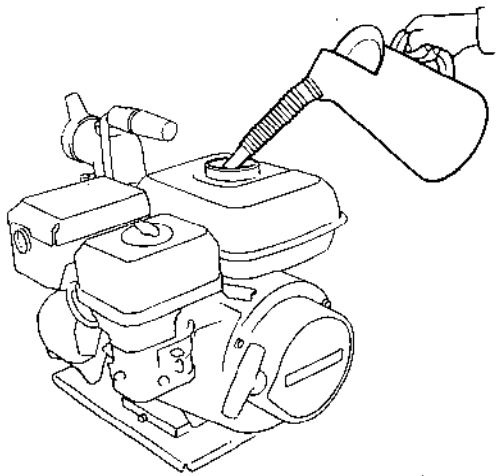
Never use stale or contaminated gasoline or an oil/gasoline mixture. Avoid getting dirt, dust or water in the fuel tank. Use of a lower octane gasoline can cause persistent "pinging" or heavy "spark knock" (a metallic rapping noise) which, if severe, can lead to engine damage.

CAUTION: If "spark knock" or "pinging" occurs at a steady engine speed under normal load, change brands of gasoline. If spark knock or pinging persists, consult your authorized Honda dealer. Failure to do so is considered misuse, and damage caused by misuse is not covered by Honda's Limited Warranty.

Occasionally you may experience light spark knock while operating under heavy loads. This is no cause for concern, it simply means your engine is operating efficiently.

After refueling, be sure to tighten the fuel tank cap firmly.

Fuel tank capacity WB20X...2.5 lit. (0.66 US gal, 0.55 Imp gal)
WB30X...3.6 lit. (0.95 US gal, 0.79 Imp gal)



WARNING

- **Gasoline is extremely flammable and is explosive under certain conditions.**
- **Refuel in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.**
- **Do not overfill the fuel tank (there should be no fuel in the filler neck). After refueling, make sure the tank cap is closed properly and securely.**
- **Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.**
- **Avoid repeated or prolonged contact with skin or breathing of vapor. KEEP OUT OF REACH OF CHILDREN.**

GASOLINES CONTAINING ALCOHOL

If you decide to use a gasoline containing alcohol (gasohol), be sure it's octane rating is at least as high as that recommended by Honda. There are two types of "gasohol": one containing ethanol, and the other containing methanol. Do not use gasohol that contains more than 10% ethanol. Do not use gasoline containing methanol (methyl or wood alcohol) that does not also contain cosolvents and corrosion inhibitors for methanol. Never use gasoline containing more than 5% methanol, even if it has cosolvents and corrosion inhibitors.

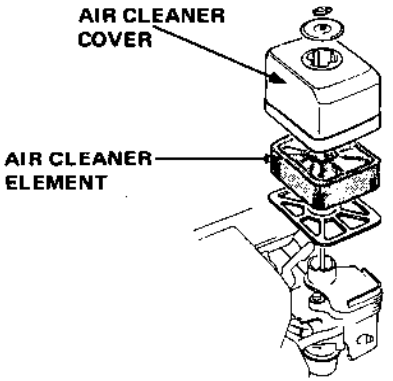
NOTE:

- Fuel system damage or engine performance problems resulting from the use of fuels that contain alcohol is not covered under the warranty. Honda cannot endorse the use of fuels containing methanol since evidence of their suitability is as yet incomplete.
- Before buying fuel from an unfamiliar station, try to find out if the fuel contains alcohol, if it does, confirm the type and percentage of alcohol used. If you notice any undesirable operating symptoms while using a gasoline that contains alcohol, or one that you think contains alcohol, switch to a gasoline that you know does not contain alcohol.

5. Check the air cleaner element.

Remove the wing nut, washer and air cleaner cover.
Check the element for dirt or obstruchtion.
Clean the element if necessary (see page 17).

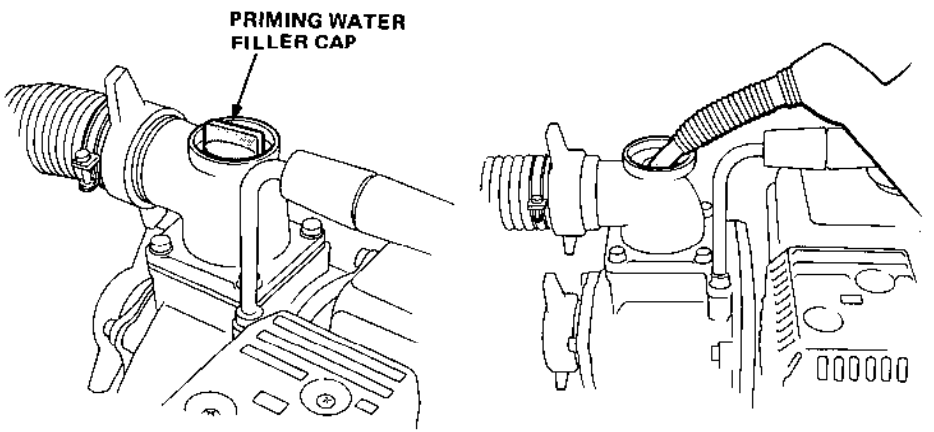
CAUTION: Never run the engine without the air cleaner. Rapid engine wear will result from contaminants, such as dust and dirt, being drawn through the carburetor, into the engine.



6. Check the priming water.

The pump chamber should be completely filled before operating.

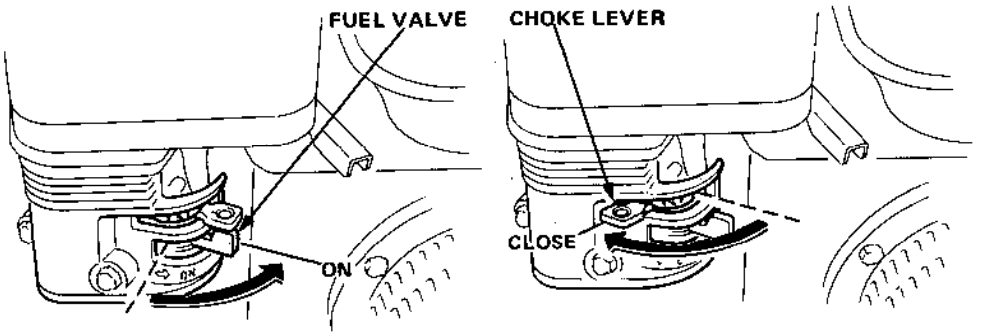
CAUTION: Never attempt to operate the pump without priming water or the pump will overheat. Extended dry operation will destroy the pump seal. If the unit has been operated dry, stop the engine immediately and allow the pump to cool before adding priming water.



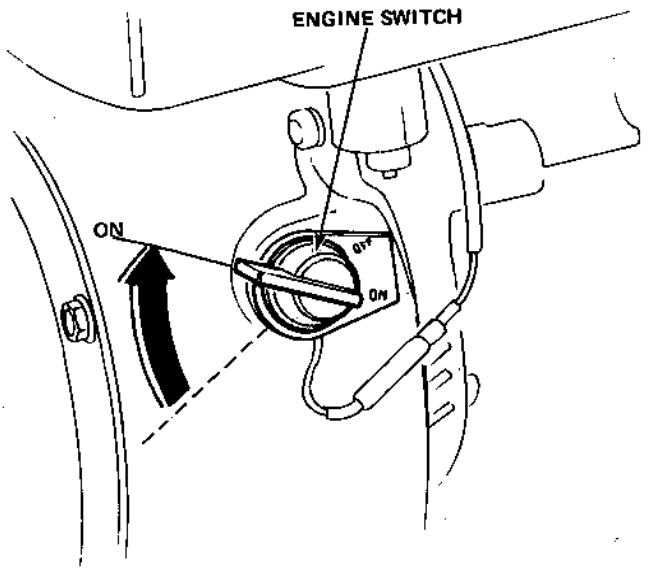
4. STARTING THE ENGINE

1. Turn the fuel valve ON.
2. Close the choke lever.

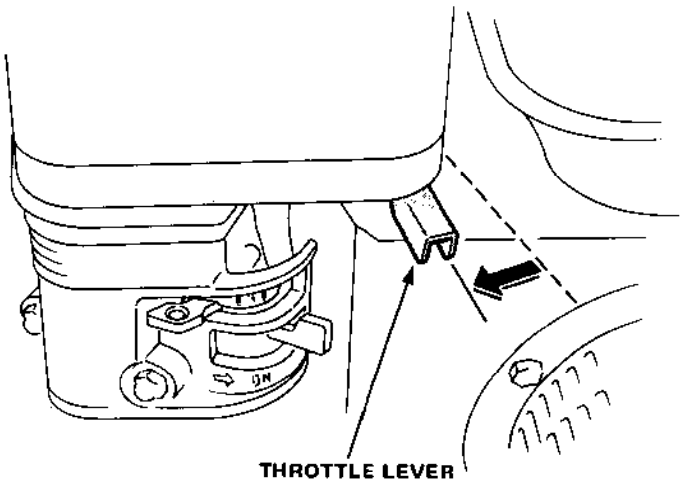
NOTE: Do not use the choke if the engine is warm or the ambient temperature is high.



3. Turn the engine switch to the ON position.

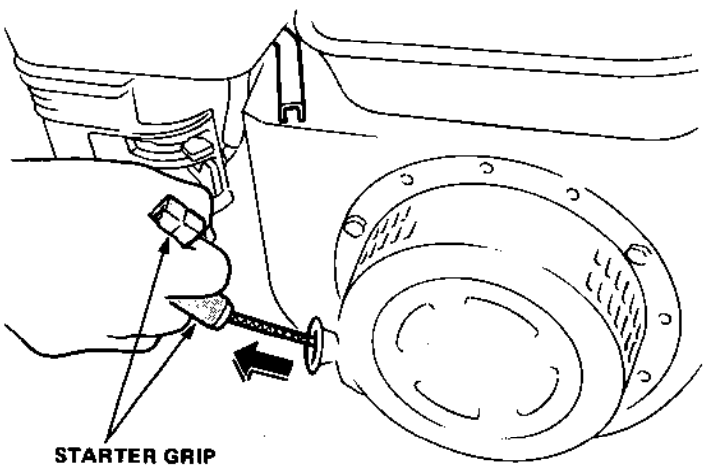


4. Move the throttle lever slightly to the left.



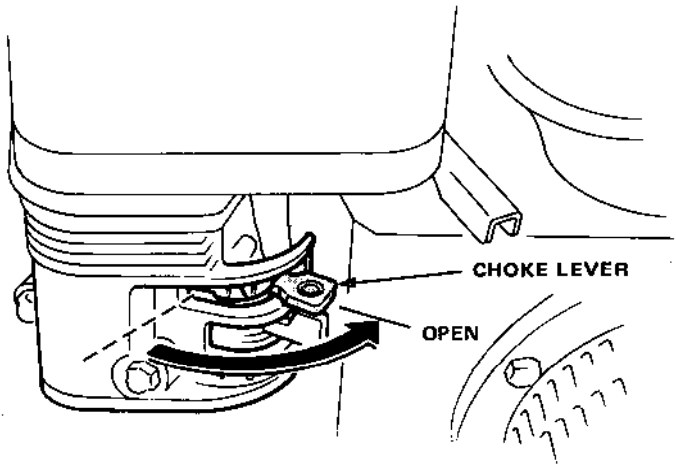
5. Pull the starter grip lightly until resistance is felt, then pull it briskly.

CAUTION: Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.

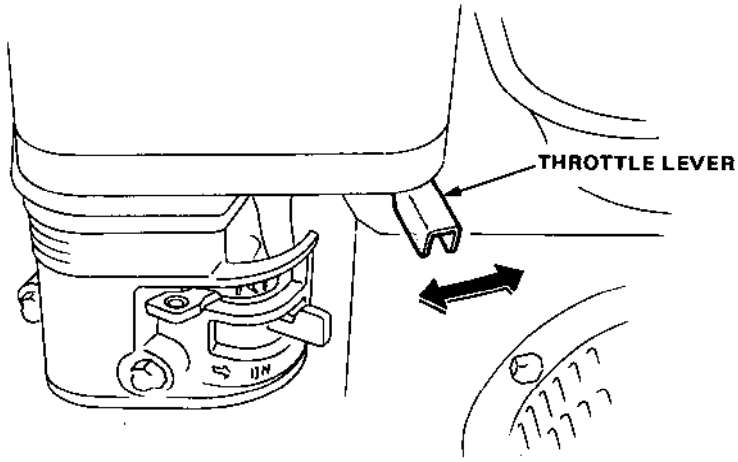


5. OPERATION

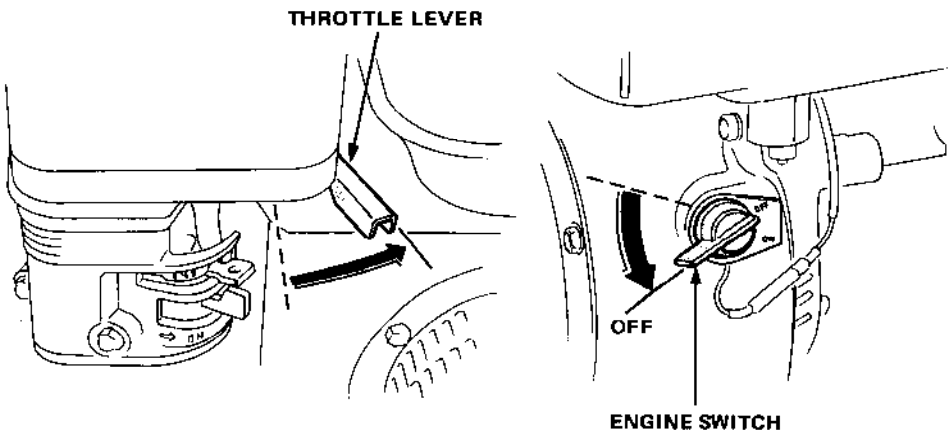
1. As the engine warms up, gradually open the choke.



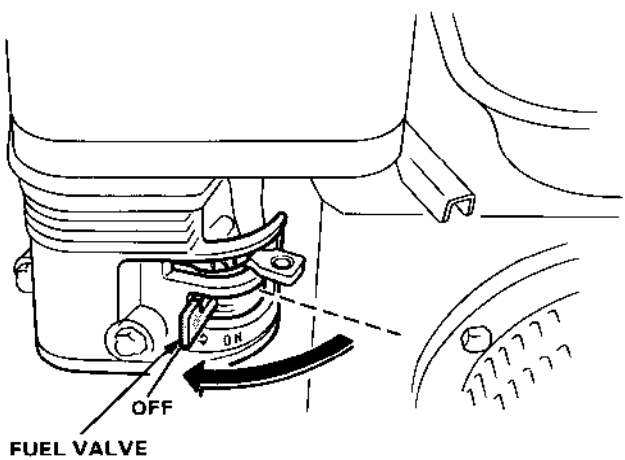
2. Set the throttle at the desired speed.



1. Move the throttle lever fully to the right.
2. Turn the engine switch to the OFF position.



3. Turn the fuel valve OFF.



NOTE: To stop the engine in an emergency, turn the engine switch to the OFF position.

High altitude operation

At high altitude, the standard carburetor air-fuel mixture will be excessively rich. Performance will decrease, and fuel consumption will increase.

High altitude performance can be improved by installing a smaller diameter main fuel jet in the carburetor and readjusting the pilot screw. If you always operate the water pump at altitudes higher than 6,000 feet above sea level, have your authorized Honda Water Pump dealer perform these carburetor modifications.

Even with suitable carburetor jetting, engine horsepower will decrease approximately 3.5% for each 1,000 foot increase in altitude. The affect of altitude on horsepower will be greater than this if no carburetor modification is made.

CAUTION: Operation of the Water Pump at an altitude lower than the carburetor is jetted for may result in reduced performance, overheating, and serious engine damage caused by an excessively lean air/fuel mixture.

The purpose of the maintenance and adjustment schedule is to keep the engine in the best operating condition. Inspect or service as scheduled in the table below.

WARNING **Shut off the engine before performing any maintenance. If the engine must be run, make sure the area is well ventilated. The exhaust contains poisonous carbon monoxide gas; exposure can cause loss of consciousness and may lead to death.**

CAUTION:

- **If the pump has been used with sea water, muddy water, etc., pump clean, fresh water through the pump immediately afterward to reduce corrosion and remove sediment.**
- **Use only genuine HONDA parts or their equivalent. The use of replacement parts which are not of equivalent quality may damage the engine.**

Maintenance Schedule

REGULAR SERVICE PERIOD / ITEM Perform at every indicated month or operating hour interval, whichever comes first.		Dairy	First month or 20 Hrs.	Every 3 months or 50 Hrs.	Every 6 months or 100 Hrs.	Every year or 300 Hrs.
Engine oil	Inspection	○				
	Change		○		○	
Air cleaner element	Inspection	○				
	Cleaning			○(1)		
Spark plug maintenance					○	
Tappet clearance adjustment						○(2)
Combustion chamber cleaning						○(2)
Fuel tank cleaning						○(2)
Fuel line		Replace every 3 years.				
Impeller inspection						○(2)
Casing cover inspection						○(2)
Inlet valve inspection						○(2)

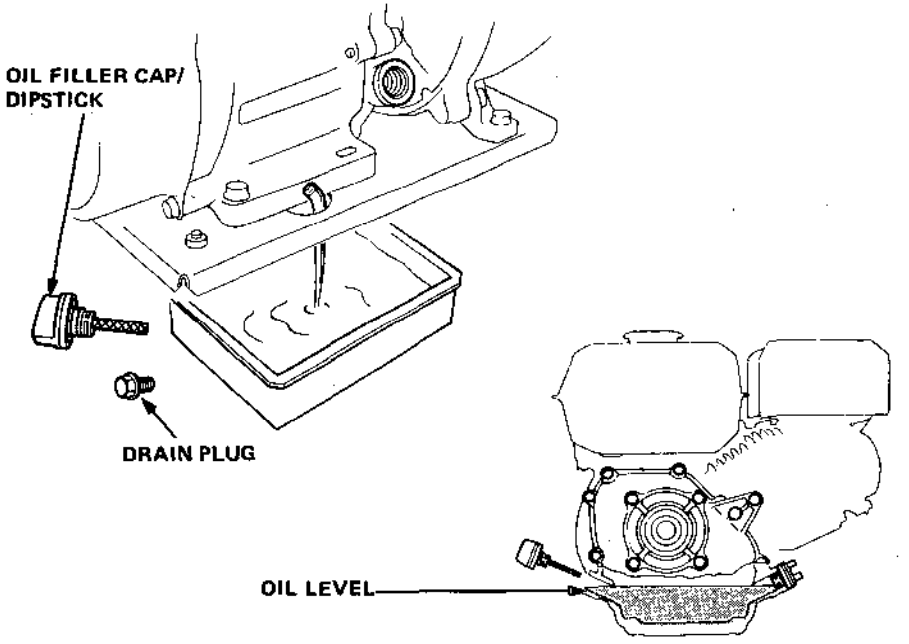
NOTE (1): Service more frequently when used in dusty areas.
(2): These items should be serviced by an authorized Honda dealer, unless the owner has the proper tools and is mechanically proficient. See the Honda Shop Manual.

1. Changing oil

Drain the oil while the engine is still warm to assure rapid and complete draining.

1. Remove the oil filler cap and the drain plug, then drain the oil.
2. Reinstall the drain plug and tighten securely.
3. Refill with the recommended oil (see page 6) to the specified level.

OIL CAPACITY: 0.6ℓ (0.63 US qt)



CAUTION: Used motor oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used. oil.

NOTE: Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you take it in a sealed container to your local service station for reclamantion. Do not throw it in the trash or pour it on the ground.

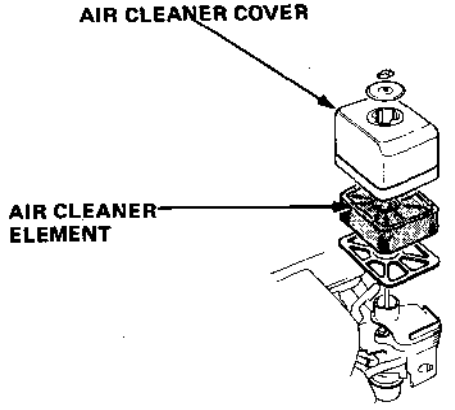
2. Air cleaner service

A dirty air cleaner will restrict air flow to the carburetor. To prevent carburetor malfunction, service the air cleaner regularly. Service more frequently when operating the pump in extremely dusty areas.

WARNING **Never use gasoline or low flash point solvents for cleaning the air cleaner element. A fire or explosion could result.**

CAUTION: Never run the pump without the air cleaner. Rapid engine wear will result from contaminants, such as dust and dirt being drawn through the carburetor, into the engine.

1. Unscrew the wing nut, remove the air cleaner cover and remove the foam element.
2. Wash the element in a non-flammable or high flash point solvent and dry it thoroughly.
3. Soak the element in clean engine oil and squeeze out the excess oil.
4. Reinstall the air cleaner element and the cover.



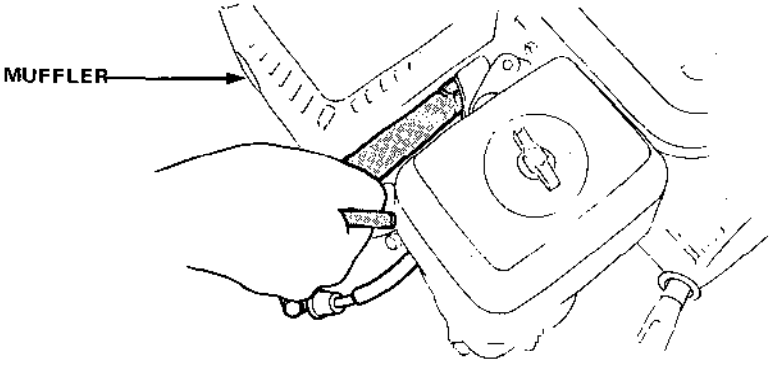
3. Spark plug service

Recommended spark plug: BPR6ES (NGK)
W20EPR-U (ND)

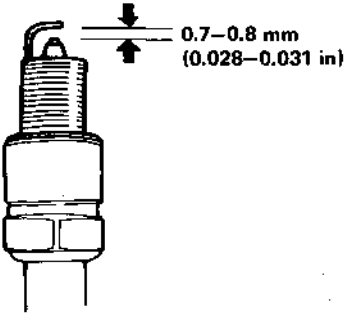
To ensure proper engine operation, the spark plug must be properly gapped and free of deposits.

1. Remove the spark plug.

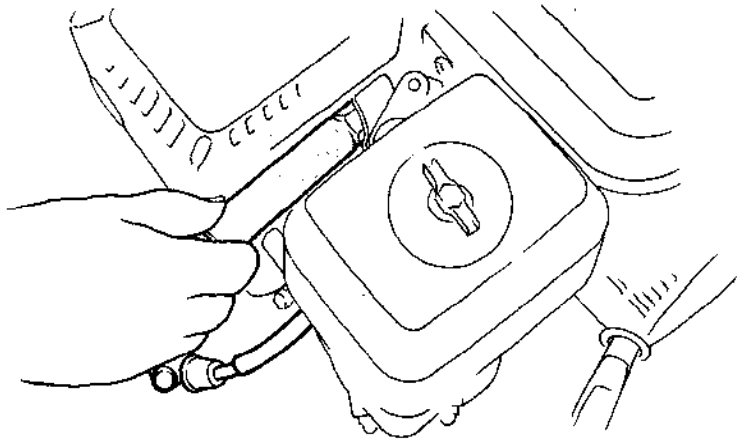
WARNING **If the engine has been running, the muffler will be very hot. Be careful not to touch the muffler.**



2. Visually inspect the spark plug. Discard it if the insulator is cracked or chipped. Clean the spark plug with a wire brush if it is to be reused.
3. Measure the plug gap with a feeler gauge. The gap should be 0.7–0.8 mm (0.028–0.031 in). Correct as necessary by bending the side electrode.



4. Thread the plug in by hand to prevent cross-threading.



5. Tighten a new spark plug 1/2 turn with the wrench to compress the washer. If you are reusing a plug, it should only take 1/8—1/4 turn after the plug seats.

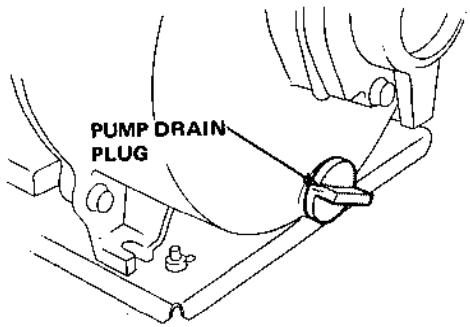
CAUTION: The spark plug must be securely tightened. An improperly tightened plug can become very hot and damage the engine. Spark plugs which have an improper heat range may cause engine damage.

8. TRANSPORTING/STORAGE

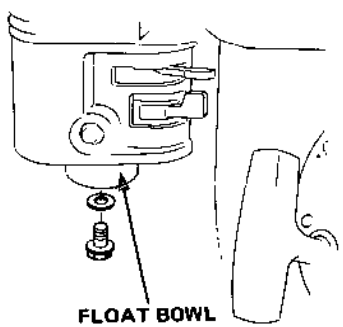
WARNING When transporting the pump, turn the fuel valve OFF and keep the pump level to prevent fuel spillage. Spilled fuel or fuel vapor may ignite. To avoid severe burns or fire hazards, let the engine cool before transporting the pump or storing it indoors.

Before storing the pump for an extended period;

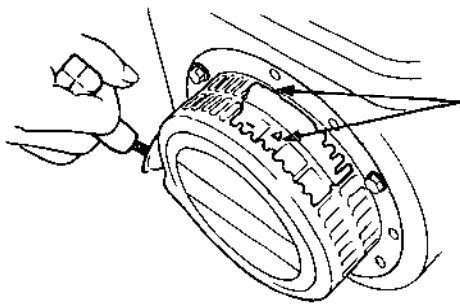
1. Be sure the storage area is free of excessive humidity and dust.
2. Clean the pump interior.
 Sediment will settle in the pump if it has been used in muddy or sandy water, or water containing heavy debris. Pump clean water through the pump before shutting down or impeller may be damaged when restarting. After flushing, remove the pump drain plug, drain as much water as possible from the pump housing and replace the plug.



3. Drain the fuel.
 a. With the fule valve OFF, remove the carburetor float bowl and drain the carburetor. Drain the gasoline into a suitable container.
 b. Turn the fuel valve ON and drain the gasoline in the fuel tank into a suitable container.
 c. Reinstall the carburetor float bowl.



4. Pull the starter cord until resistance is felt. Continue pulling until the notch on the starter pulley aligns with the hole on the recoil starter (see illustration below). At this point, the intake and exhaust valves are closed, and this will help to protect the engine from internal corrosion.



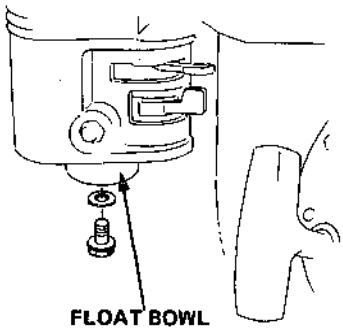
Align the mark on the starter pulley with the hole at the top of recoil starter.

5. Change engine oil.

9. TROUBLESHOOTING

When the engine will not start:
1. Is the engine switch ON?
2. Is there enough fuel?
3. Is the fuel valve on?
4. Is gasoline reaching the carburetor?
 To check, remove the float bowl and turn the fuel valve on.
 Fuel should flow out free.

WARNING **If any fuel is spilled, make sure the area is dry before testing the spark plug or starting the engine. Spilled fuel or fuel vapor may ignite.**

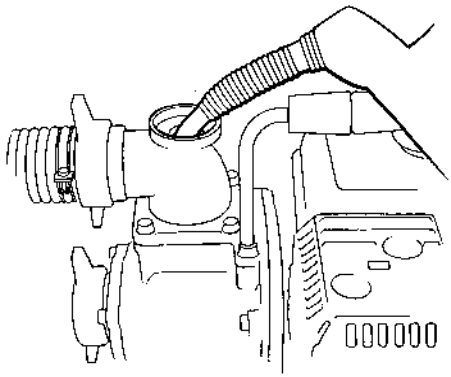


5. Is there a spark at the spark plug?

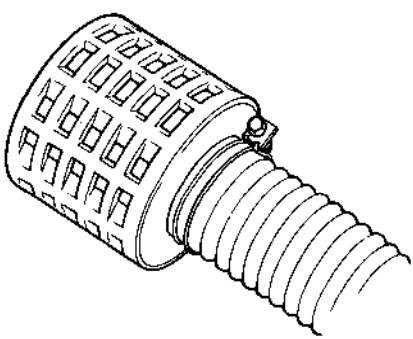
 a. Remove the spark plug cap. Clean any dirt from around the spark plug base, then remove the spark plug.
 b. Install the spark plug in the plug cap.
 c. Turn the engine switch on.
 d. Ground the side electrode to any engine ground, pull the recoil starter to see if sparks jump across the gap.
 e. If there are no sparks, replace the plug.
 If OK, install the new plug and try to start the engine according to the instructions.

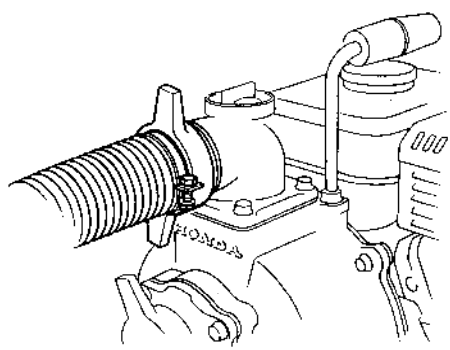
6. If the engine still does not start, take the pump to an authorized Honda water pump dealer.

When the pump does not pump water:
1. Is the pump fully primed?



2. Is the strainer clogged?
3. Are the hose bands installed securely?
4. Are the hoses damaged?
5. Is the suction head too high?
6. If the pump still does not pump the water, take the pump to an authorized Honda water pump dealer.





10. SPECIFICATIONS

Model	WB20X	WB30X

Dimensions and Weight

Length x Width x Height	445 x 345 x 395 mm (17.5 x 13.6 x 15.6 in)	515 x 400 x 450 mm (20.3 x 15.7 x 17.7 in)
Dry weight (mass)	19.5 kg (43.0 lb)	27.0 kg (59.5 lb)

Engine

Model	GX110	GX140
Engine type	4-stroke, over head valve, 1 cylinder	
Displacement [Bore x Stroke]	107 cc (6.6 cu in) [57 x 42 mm (2.2 x 1.7 in)]	144 cc (8.8 cu in) [64 x 45 cm (2.5 x 1.8 in)]
Max. output	3.5 PS/3,600 rpm	5.0 PS/3,600 rpm
Max. torque	0.7 kg-m (5.2 ft-lb)/ 2,500 rpm	1.0 kg-m (7.7 ft-lb)/ 2,500 rpm
Cooling system	Forced air	
Ignition system	Transistor magneto	
PTO shaft rotation	Counterclockwise	

Pump

Suction port diameter	50 mm (2 in)	80 mm (3 in)
Discharge port diameter	50 mm (2 in)	80 mm (3 in)
Rated revolutions	3,550 rpm	3,550 rpm
Total head	32 m (105 ft)	28 m (92 ft)
Suction head	8 m (27.9 ft)	8 m (27.9 ft)
Capacity	500 ℓ (132 US gal)/min	1,000 ℓ (264 US gal)/min
Self-priming time	110 sec at 5 m (16.5 ft)	150 sec at 5 m (16.5 ft)
Continuous running time	2h 30 min	2h 30 min

Owner Satisfaction

Your satisfaction and goodwill are important to your dealer and to us. All Honda warranty details are explained in the Distributor's Limited Warranty. Normally, any problems concerning the product will be handled by your dealer's service department. If you have a warranty problem that has not been handled to your satisfaction, we suggest you take the following action:

- Discuss your problem with a member of dealership management. Often complaints can be quickly resolved at that level. If the problem has already been reviewed with the Service Manager, contact the owner of the dealership or the General Manager.

- If your problem still has not been resolved to your satisfaction, contact the Power Equipment Customer Relations Department of American Honda Motor Co., Inc.

 American Honda Motor Co., Inc.
 Power Equipment Customer Relations Department
 P.O. Box 50
 Gardena, California 90247-0805
 Telephone: (213) 604-2400

 We will need the following information in order to assist you:

 — Your name, address, and telephone number
 — Product model and serial number
 — Date of purchase
 — Dealer name and address
 — Nature of the problem

After reviewing all the facts involved, you will be advised of what action can be taken. Please bear in mind that your problem will likely be resolved at the dealership, using the dealer's facilities, equipment, and personnel, so it is very important that your initial contact be with the dealer.

Your purchase of a Honda product is greatly appreciated by both your dealer and American Honda Motor Co., Inc. We want to assist you in every way possible to assure your complete satisfaction with your purchase.

MEMO



31YB3050
00X31-YB3-0500

㊊Ⓨ2008805
PRINTED IN JAPAN